



How Paper Car Wheels are Made.

On all the first-class passenger cars paper wheels are used. The paper wheel consists of a paper core, or centre, between two steel plates one-fourth inch thick, bolted together through one flange on the iron hub and another on the steel tire, the flanges being on opposite sides of the wheel, so that the core cannot get out of place.

The paper used consists of good straw board. The sheets of millboard are laid on a table in piles, and have their upper surfaces pasted by boys, with ordinary flour paste. They are piled in lots of thirteen, and an unpasted sheet is put between the lots, so that the mass of paper readily falls apart into slabs a quarter of an inch thick in the drying room after coming from the hydraulic press.

Several of these slabs are then pasted together, put under hydraulic pressure of 2,000 pounds to the square inch and dried for a week or so at a temperature of about 120 degrees Fahrenheit. This is repeated until the resulting blocks contain 200 sheets of paper, the original ten inches in thickness of the paper as it came from the mill being pressed into a thickness of four inches, making it as hard as oak.

After the blocks are thoroughly seasoned they are faced and turned in lathes and forced by about 120 tons pressure into the steel tires, which are two inches thick and bored tapering one and one-half degrees. The hub is forced on with a pressure of about thirty tons; it is turned straight and three-sixteenths inches larger than the hole in the paper. The bolt holes are drilled and the bolts forced in by steam hammers. The life of one of those wheels is from 500,000 to 800,000 miles; they are said to intercept vibration, and so prevent gradulation of the axles, etc.—*Philadelphia Item*.

A Telegrapher's Ruse.

On one occasion an operator started out from Fairfax station on a hand-car propelled by three contrabands to attempt to restore the line so that Pope's operators could communicate his whereabouts. Finding the line cut beyond Pohick Bridge, he spliced it and got signals from both directions. While so engaged a party of guerrillas emerged from the woods to the track and surrounded him. Bidding the negroes stand fast, he dictated a swift message over the line, which was being repeated back to him and copied as the Confederate leader leaned over his shoulder and read the significant words: "Buford has sent back a regiment of cavalry to meet the one from here and guard the line. If you are molested we will hang every citizen on the route." The instrument ceased ticking as the operator firmly replied, "... —" (O.K.). A painful pause ensued. The Confederate might have suspected a ruse if at the moment a gleam of sabers had not shone in the direction of Fairfax Court House. Hastily starting for the woods, the leader exclaimed, "Come home, boys; these yere ain't *our* niggers"; and they disappeared, while the hand-car, as if driven by forty contraband power, sped rapidly rearward.

Who ever gave us such a clear picture of Venetian life as this, in one of Phillips Brooks's letters to his little niece? The *Century* gives it:—

VENICE, August 13, 1882.

DEAR GERTIE: When the little children in Venice want to take a bath, they just go down

to the front steps of the house and jump off and swim about in the street. Yesterday I saw a nurse standing on the front steps, holding one end of a string, and the other end was tied to a little fellow who was swimming up the street. When he went too far, the nurse pulled in the string, and got her baby home again. Then I met another youngster, swimming in the street, whose mother had tied him to a post by the side of the door, so that when he tried to swim away to see another boy who was tied to another door-post up the street, he couldn't, and they had to sing out to one another over the water. Is not this a queer city? You are always in danger of running over some of the people and drowning them, for you go about in a boat instead of a carriage, and use an oar instead of a horse. But it is ever so pretty, and the people, especially the children, are very bright, and gay, and handsome. When you are sitting in your room at night, you hear some music under your window, and look out, and there is a boat with a man with a fiddle, and a woman with a voice, and they are serenading you. To be sure, they want some money when they are done, for everybody begs here, but they do it very prettily and are full of fun.

Railways of the World.

At the railway congress lately in session at St. Petersburg the railway mileage of the world

was presented in tabulated form. This showed that the total mileage at the beginning of this year was 285,805, of which 167,755 are in the United States, 14,082 miles in Canada and 5,625 miles in Mexico and the Argentine Republic. In Europe the German Empire comes first, with 26,790 miles, France second, with 24,310 miles, Great Britain and Ireland third, with 22,685 miles, and Russia fourth, with 19,315 miles. Wurtemberg and Denmark are the countries which have made the least progress in the construction of railways since 1886, while in Asia, apart from the 16,875 miles of lines in India, the Trans-Caspian line recently constructed by the Russians is 895 miles in length, the Dutch colonies have 850 miles of railway, the French 65 and the Portuguese 34, while there are 125 miles in China and 18 in Persia. In Africa the colony of Algeria and Tunis comes first, with 1,910 miles, the Cape Colony second, with about 1,880 miles, Egypt third, with 965 miles, and Natal fourth, with 311 miles; while the Orange Free State has 150 miles, and other minor States about 300 miles. In Australia the figures are 2,703 miles for Victoria, 2,275 miles in New South Wales, 1,645 miles for Queensland, 1,875 miles for South Australia, 515 miles for West Australia, 401 for Tasmania and 1,950 for New Zealand. These figures are from the latest obtainable statistics, and show a material difference from those heretofore given.

